STIC Search Report
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STIC Database Tracking Number: 168931

TO: Ralph J Gitomer **Location: 3d65/3c18** **Art Unit: 1655** **Wednesday, August 03, 2005** **Case Serial Number: 10/807682**	**From: Noble Jarrell** **Location: Biotech-Chem Library** **Rem 1B71** **Phone: 272-2556** **Noble.jarrell@uspto.gov**

Search Notes

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=> d his

     (FILE 'HOME' ENTERED AT 06:39:19 ON 03 AUG 2005)

     FILE 'HCAPLUS' ENTERED AT 06:39:30 ON 03 AUG 2005
L1            1 (US2004180324 OR US2003017212)/PN OR US2001-280085#/AP,PRN

     FILE 'REGISTRY' ENTERED AT 06:40:36 ON 03 AUG 2005

     FILE 'HCAPLUS' ENTERED AT 06:40:38 ON 03 AUG 2005
L2              TRA L1 1- RN :         1 TERM

     FILE 'REGISTRY' ENTERED AT 06:40:38 ON 03 AUG 2005
L3            1 SEA L2

     FILE 'WPIX' ENTERED AT 06:40:46 ON 03 AUG 2005
L4            2 L1

=> b hcap
FILE 'HCAPLUS' ENTERED AT 06:41:09 ON 03 AUG 2005
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FILE COVERS 1907 - 3 Aug 2005  VOL 143 ISS 6
FILE LAST UPDATED: 2 Aug 2005  (20050802/ED)

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 substance identification.

=> d all l1 tot

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2003:58622  HCAPLUS
DN   138:86121
ED   Entered STN:  24 Jan 2003
TI   Process for the identification and isolation of insulin producing beta
     cell differentiating factor from the perivitelline fluid of the fertilized
     eggs of horseshoe crab
IN   Parab, Pradeep Bhaskar; Chatterji, Anil
PA   Department of Biotechnology, India; Council of Scientific and Industrial
     Research
SO   U.S. Pat. Appl. Publ., 3 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  A61K035-64
     ICS  C12N005-06; C12N005-10
INCL 424538000; 435354000
CC   9-11 (Biochemical Methods)
     Section cross-reference(s): 12
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
```

PI	US 2003017212	A1	20030123	US 2002-112079	20020329 <--
	US 2004180324	A1	20040916	US 2004-807682	20040324 <--
PRAI	US 2001-280085P	P	20010330 <--		
	US 2002-112079	A1	20020329		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003017212	ICM	A61K035-64
	ICS	C12N005-06; C12N005-10
	INCL	424538000; 435354000
US 2003017212	NCL	424/538.000; 435/354.000
	ECLA	A61K035/64; C07K014/435A1 <--
US 2004180324	NCL	435/004.000; 435/325.000
	ECLA	A61K035/64; C07K014/435A1 <--

AB This invention relates to the identification and characterization of cell proliferating factor in the perivitelline fluid of the fertilized eggs of the Indian horseshoe crab. Accordingly, the present invention provides a process for identification of insulin production β-cells proliferating factor from the perivitelline fluid of fertilized eggs of horseshoe crab that facilitates the proliferation of AR42J cells from rat origin.

ST insulin prodn beta cell differentiation perivitelline fluid egg crab

IT Animal cell line
(AR42J; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Named reagents and solutions
RL: NUU (Other use, unclassified); USES (Uses)
(Dulbecco's modified min. essential medium; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Crab
(Indian horseshoe; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Laboratory ware
(culture plates, NUNC; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Egg
(fertilized; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Blood serum
(fetal calf, supplementation with; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Animal tissue culture
Cell differentiation
Cell proliferation
Storage
Temperature effects, biological
(process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Embryo, animal
(yolk sac, perivitelline fluid of; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT Pancreatic islet of Langerhans
(β-cell; process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

IT 9004-10-8, Insulin, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(process for identification and isolation of insulin producing beta cell differentiating factor from the perivitelline fluid of fertilized eggs of horseshoe crab)

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=> b reg
FILE 'REGISTRY' ENTERED AT 06:41:16 ON 03 AUG 2005
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STRUCTURE FILE UPDATES:    2 AUG 2005  HIGHEST RN 857941-82-3
DICTIONARY FILE UPDATES:   2 AUG 2005  HIGHEST RN 857941-82-3

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**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
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* effective March 20, 2005.  A new display format, IDERL, is now     *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
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http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l3 tot

L3   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   9004-10-8  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Insulin (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Actrapid
CN   Actrapid HM
CN   Actrapid MC
CN   Decurvon
CN   Dermulin
CN   Endopancrine
CN   Exubera
CN   HMR 4006
CN   Iletin
CN   Insular
CN   Insulin Injection
CN   Insulyl
CN   Intesulin B
CN   Iszilin
CN   Mixtard
CN   Musulin
DR   8049-67-0, 8049-95-4, 9004-12-0, 9037-76-7, 9045-63-0, 9045-65-2,
     9045-66-3, 9045-67-4, 9066-39-1, 9066-40-4, 11081-38-2, 57126-42-8,
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     37243-75-7, 37294-43-2, 69090-47-7, 88026-11-3, 88026-12-4
MF   Unspecified
CI   PMS, COM, MAN
PCT  Manual registration
LC   STN Files:   ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
       CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM,
       CSNB, DDFU, DIOGENES, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB,
       IMSCOSEARCH, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PDLCOM*, PHAR,
       PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VTB
         (*File contains numerically searchable property data)
     Other Sources:   EINECS**, WHO
         (**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

          104099 REFERENCES IN FILE CA (1907 TO DATE)
            1912 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
          104260 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> b wpix
FILE 'WPIX' ENTERED AT 06:41:22 ON 03 AUG 2005
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FILE LAST UPDATED:          2 AUG 2005      <20050802/UP>
MOST RECENT DERWENT UPDATE:     200549        <200549/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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    DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
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    FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv  <<<

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http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
    FOR DETAILS. <<<
'BIX BI,ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d all l4


L4   ANSWER 1 OF 2  WPIX  COPYRIGHT 2005 THE THOMSON CORP on STN
AN   2004-667656 [65]   WPIX
CR   2003-401655 [38]
DNC  C2004-238539
TI   Identifying insulin producing beta-cell differentiating factor, useful in
     screening for molecules that may control or cure diabetes, comprises
     collecting peri-vitalline fluid from the fertilized eggs of Indian
     horseshoe crab.
DC   B04 D16
IN   CHATTERJI, A; PARAB, P B
PA   (BIOT-N) DEPT BIOTECHNOLOGY & COUNCIL SCI & INDUS
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CYC 1
PI US 2004180324 A1 20040916 (200465)* 3 C12N005-06 <--
ADT US 2004180324 A1 **Provisional US 2001-280085P 20010330**, Cont of US 2002-112079 20020329, US 2004-807682 20040324
PRAI **US 2001-280085P 20010330**; US 2002-112079 20020329; US 2004-807682 20040324
IC ICM C12N005-06
ICS C12Q001-00
AB US2004180324 A UPAB: 20041011
NOVELTY - Identifying insulin producing beta -cells proliferating factor from the peri-vitalline fluid of fertilized eggs of horseshoe crab that facilitates the proliferation of AR42J cells from rat origin.
USE - The method is useful for identifying and isolating insulin producing beta -cell differentiating factor from the peri-vitalline fluid of the fertilized eggs of the Indian horseshoe crab. This may be used in screening for molecules that may control or cure diabetes.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-B04M; B04-F01; B04-J03A; B04-P01A; B11-C08E; B11-C08E1; B12-K04E; D05-C12; D05-H08; D05-H09

=> d all l4 2

L4 ANSWER 2 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2003-401655 [38] WPIX
CR 2004-667656 [65]
DNC C2003-106745
TI Identification of insulin producing beta-cells proliferating factor useful for treating diabetes, from peri-vitalline fluid of fertilized eggs of horseshoe crab e.g. Indian horseshoe crab.
DC B04 D16
IN CHATTERJI, A; PARAB, P B
PA (BIOT-N) DEPT BIOTECHNOLOGY & COUNCIL SCI & INDUS
CYC 1
PI US 2003017212 A1 20030123 (200338)* 3 A61K035-64 <--
ADT US 2003017212 A1 **Provisional US 2001-280085P 20010330**, US 2002-112079 20020329
PRAI **US 2001-280085P 20010330**; US 2002-112079 20020329
IC ICM A61K035-64
ICS C12N005-06; C12N005-10
AB US2003017212 A UPAB: 20041011
NOVELTY - Identifying new insulin producing beta -cells proliferating factor from the peri-vitalline fluid (F1) of fertilized eggs of horseshoe crab e.g. Indian horseshoe crab, comprising collecting (F1) of fertilized eggs of the horseshoe crab that facilitates the proliferation of AR42J cells from rat origin, is new.
USE - For identification of insulin producing beta -cells proliferating factor (claimed) useful for treating diabetes mellitus.
ADVANTAGE - The method identifies insulin producing beta -cells proliferating factor that facilitates the proliferation of AR42J cells from rat origin.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-B04M; B04-F02; B04-H01; B11-C08E1; B12-K04E; B14-S04; D05-H08; D05-H09

=> b home
FILE 'HOME' ENTERED AT 06:41:31 ON 03 AUG 2005

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=> d his full

     (FILE 'HOME' ENTERED AT 06:39:19 ON 03 AUG 2005)

     FILE 'HCAPLUS' ENTERED AT 06:39:30 ON 03 AUG 2005
L1             1 SEA ABB=ON  PLU=ON  (US2004180324 OR US2003017212)/PN OR
                 US2001-280085#/AP,PRN

     FILE 'REGISTRY' ENTERED AT 06:40:36 ON 03 AUG 2005

     FILE 'HCAPLUS' ENTERED AT 06:40:38 ON 03 AUG 2005
L2             TRA L1 1- RN :         1 TERM

     FILE 'REGISTRY' ENTERED AT 06:40:38 ON 03 AUG 2005
L3             1 SEA ABB=ON  PLU=ON  L2
                 D SCA

     FILE 'WPIX' ENTERED AT 06:40:46 ON 03 AUG 2005
L4             2 SEA ABB=ON  PLU=ON  (US2004180324 OR US2003017212)/PN OR
                 US2001-280085#/AP,PRN

     FILE 'HCAPLUS' ENTERED AT 06:48:12 ON 03 AUG 2005
                 E HORSESHOE CRAB/CT
                 E E3+ALL
                 E E2+ALL
L5            36 SEA ABB=ON  PLU=ON  LIMULIDAE/CT
                 E LIMULUS POLYPHEMUS/CT
                 E E3+ALL
L6           835 SEA ABB=ON  PLU=ON  LIMULUS POLYPHEMUS/CT
                 E E5+ALL
L7          1594 SEA ABB=ON  PLU=ON  LIMULUS+NT/CT
                 E CRABS/CT
                 E E3+ALL
                 E E2
                 E E3+ALL
L8             5 SEA ABB=ON  PLU=ON  CRAB+OLD,NT/CT (L)(HORSESHOE OR LIMUL?)
                 D SCA
                 E EGG/CT
                 E E3+ALL
L9         38290 SEA ABB=ON  PLU=ON  EGG+OLD/CT
                 E E11+ALL
L10       147150 SEA ABB=ON  PLU=ON  "EMBRYO, ANIMAL"+OLD,NT/CT
                 E FERTILIZATION/CT
                 E E3+ALL
L11         7461 SEA ABB=ON  PLU=ON  FERTILIZATION/CT
                 E PARAB P/AU
L12           23 SEA ABB=ON  PLU=ON  ("PARAB P"/AU OR "PARAB P B"/AU OR "PARAB
                 PRADEEP"/AU OR "PARAB PRADEEP B"/AU OR "PARAB PRADEEP BHASKAR"/
                 AU)
                 E CHATTERJL A/AU
                 E CHATTERJI A/AU
L13          162 SEA ABB=ON  PLU=ON  ("CHATTERJI A"/AU OR "CHATTERJI A C"/AU OR
                 "CHATTERJI A K"/AU OR "CHATTERJI A N"/AU OR "CHATTERJI
                 ANIL"/AU)
L14         1643 SEA ABB=ON  PLU=ON  L9 (L) FERTIL?
L15            5 SEA ABB=ON  PLU=ON  (L5 OR L6 OR L7 OR L8) AND (L11 OR L14)
L16            1 SEA ABB=ON  PLU=ON  L15 AND (L12 OR L13)
L17            4 SEA ABB=ON  PLU=ON  L15 NOT L16
L18            0 SEA ABB=ON  PLU=ON  L17 AND ?VITELL?
L19            1 SEA ABB=ON  PLU=ON  L16 AND ?VITELL?
                 D SCA
L20          187 SEA ABB=ON  PLU=ON  L10 (L) ?VITELL?
L21            1 SEA ABB=ON  PLU=ON  L20 AND (L5 OR L6 OR L7 OR L8)
L22            3 SEA ABB=ON  PLU=ON  L20 AND (HORSE(1A)SHOE OR HORSESHOE OR
                 ?LIMUL?)
L23            1 SEA ABB=ON  PLU=ON  L22 AND (L12 OR L13)
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L24           2 SEA ABB=ON  PLU=ON  L22 NOT L23
L25          81 SEA ABB=ON  PLU=ON  L20 AND L9
L26           9 SEA ABB=ON  PLU=ON  L25 AND L14
L27           1 SEA ABB=ON  PLU=ON  L26 AND (L12 OR L13)
L28           8 SEA ABB=ON  PLU=ON  L26 NOT L27
L29           7 SEA ABB=ON  PLU=ON  PERIVITELL? AND (LIMUL? OR HORSESHOE OR
                HORSE(1A)SHOE?)
L30           1 SEA ABB=ON  PLU=ON  L29 AND (L12 OR L13)
L31           6 SEA ABB=ON  PLU=ON  L29 NOT L30
                E TACHYPLEUS TRIDENTATUS/CT
                E E3+ALL
                E E4
                E E4+ALL
                E E4+ALL
L32         259 SEA ABB=ON  PLU=ON  TACHYPLEUS+NT/CT
L33         355 SEA ABB=ON  PLU=ON  TACHYPLEUS
L34           6 SEA ABB=ON  PLU=ON  (L32 OR L33) AND PERIVITELL?
L35           0 SEA ABB=ON  PLU=ON  L34 AND (L12 OR L13)
L36           1 SEA ABB=ON  PLU=ON  (L16 OR L19 OR L21 OR L23 OR L27 OR L30)
L37          10 SEA ABB=ON  PLU=ON  (L17 OR L24 OR L31 OR L35)
L38             QUE ABB=ON  PLU=ON  PY<=2001 OR AY<=2001 OR PRY<=2001 OR
                PD<20010330 OR AD<20010330 OR PRD<20010330
L39           9 SEA ABB=ON  PLU=ON  L37 AND L38
L40          10 SEA ABB=ON  PLU=ON  L37 OR L39

     FILE 'BIOSIS' ENTERED AT 07:21:26 ON 03 AUG 2005
L41       75080 SEA ABB=ON  PLU=ON  75112/BC
                E LIMUL/BC
                E TACHYPLEUS/BC
                E CRUST/BC
                E E4+ALL
L42      117696 SEA ABB=ON  PLU=ON  CRUSTACEA+NT/BC
L43         353 SEA ABB=ON  PLU=ON  (L41 OR L42) AND (LIMUL? OR HORSESHOE? OR
                HORSE(1A)SHOE?)
L44           0 SEA ABB=ON  PLU=ON  L43 AND PERIVITELL?
L45           0 SEA ABB=ON  PLU=ON  L43 AND ?VITELL?
L46         715 SEA ABB=ON  PLU=ON  L41 AND ?VITELL?
L47          17 SEA ABB=ON  PLU=ON  L41 AND PERIVITELL?
L48          12 SEA ABB=ON  PLU=ON  L47 AND EGG?
L49           8 SEA ABB=ON  PLU=ON  L48 AND FERTIL?
L50        7010 SEA ABB=ON  PLU=ON  LIMUL? OR HORSESHOE? OR HORSE(1A)SHOE?
L51          16 SEA ABB=ON  PLU=ON  L50 AND PERIVITELL?
L52          10 SEA ABB=ON  PLU=ON  L51 AND EGG?
L53           2 SEA ABB=ON  PLU=ON  L52 AND FERTIL?
L54           2 SEA ABB=ON  PLU=ON  TACHYPLEUS AND PERIVITELL? AND EGG? AND
                FERTIL?
L55           2 SEA ABB=ON  PLU=ON  (L53 OR L54)
L56           7 SEA ABB=ON  PLU=ON  TACHYPLEUS AND PERIVITELL? AND EGG?
                SEL AN 1 L55
L57           1 SEA ABB=ON  PLU=ON  "1993:51066"/AN AND L55
L58           4 SEA ABB=ON  PLU=ON  PERI(1A)VITELL? AND (TACHYPLEUS OR LIMUL?
                OR HORSESHOE? OR HORSE(1A)SHOE?)
L59           1 SEA ABB=ON  PLU=ON  "1980:162715"/AN AND L56
L60           1 SEA ABB=ON  PLU=ON  "1977:28194"/AN AND L58
L61           4 SEA ABB=ON  PLU=ON  (PERIVITELL? OR PERI(1A)VITELL?) AND
                (TACHYPLEUS OR LIMUL? OR HORSESHOE? OR HORSE(1A)SHOE?) AND
                ?FERTIL?
L62           2 SEA ABB=ON  PLU=ON  ("1985:260914"/AN OR "1985:329075"/AN) AND
                L61
L63           4 SEA ABB=ON  PLU=ON  (L59 OR L60 OR L62)
                E PARAB P/AU
L64          45 SEA ABB=ON  PLU=ON  ("PARAB P"/AU OR "PARAB P B"/AU OR "PARAB
                PRADEEP"/AU OR "PARAB PRADEEP B"/AU)
                E CHATTERJI A/AU
L65          85 SEA ABB=ON  PLU=ON  ("CHATTERJI A"/AU OR "CHATTERJI A C"/AU OR
                "CHATTERJI A K"/AU OR "CHATTERJI A N"/AU OR "CHATTERJI
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               ANIL"/AU)
L66          13 SEA ABB=ON  PLU=ON  (L64 OR L65) AND  (TACHYPLEUS OR LIMUL? OR
               HORSESHOE? OR HORSE(1A)SHOE?)
L67           1 SEA ABB=ON  PLU=ON  L66 AND ?FERTIL?

     FILE 'EMBASE' ENTERED AT 07:40:18 ON 03 AUG 2005
               E HORSEHOE/CT
L68       11566 SEA ABB=ON  PLU=ON  CRUSTACEA+NT/CT
               E PERIVITELL/CT
L69           2 SEA ABB=ON  PLU=ON  L68 AND (PERIVITELL? OR PERI(1A)VITELL?)
L70           4 SEA ABB=ON  PLU=ON  (TACHYPLEUS OR LIMUL? OR HORSESHOE? OR
               HORSE(1A)SHOE?) AND (PERIVITELL? OR PERI(1A)VITELL?)
L71           1 SEA ABB=ON  PLU=ON  80057328/AN AND L70
               E PARAB P/AU
L72          37 SEA ABB=ON  PLU=ON  ("PARAB P"/AU OR "PARAB P B"/AU)
               E CHATTERJI A/AU
L73          14 SEA ABB=ON  PLU=ON  ("CHATTERJI A"/AU OR "CHATTERJI A K"/AU OR
               "CHATTERJI A N"/AU)
L74           1 SEA ABB=ON  PLU=ON  (TACHYPLEUS OR LIMUL? OR HORSESHOE? OR
               HORSE(1A)SHOE?) AND (L72 OR L73)

     FILE 'MEDLINE' ENTERED AT 07:44:35 ON 03 AUG 2005
               E HORSESHOE/CT
               E E4+ALL
L75        1199 SEA ABB=ON  PLU=ON  HORSESHOE CRABS+NT/CT
               E PERIVITELL/CT
L76           6 SEA ABB=ON  PLU=ON  (PERIVITELL? OR PERI(1A)VITELL?) AND L75
               E EGG/CT
               E E3+ALL
               E E2+ALL
L77       48038 SEA ABB=ON  PLU=ON  OVUM+NT/CT
L78           2 SEA ABB=ON  PLU=ON  L76 AND L77
L79           1 SEA ABB=ON  PLU=ON  L76 AND ?FERTIL?
L80           3 SEA ABB=ON  PLU=ON  (L78 OR L79)
               E PARAB P/AU
L81          38 SEA ABB=ON  PLU=ON  ("PARAB P"/AU OR "PARAB P B"/AU OR "PARAB
               PRADEEP"/AU OR "PARAB PRADEEP B"/AU)
               E CHATTERJI A/AU
L82          66 SEA ABB=ON  PLU=ON  ("CHATTERJI A"/AU OR "CHATTERJI A C"/AU OR
               "CHATTERJI A K"/AU OR "CHATTERJI A N"/AU OR "CHATTERJI
               ANIL"/AU)
L83           1 SEA ABB=ON  PLU=ON  (L81 OR L82) AND L75
L84           0 SEA ABB=ON  PLU=ON  L80 AND (L81 OR L82)
               SEL AN 2-3 L80
L85           2 SEA ABB=ON  PLU=ON  (85054731/AN OR 85054732/AN) AND L80

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FILE LAST UPDATED: 2 Aug 2005  (20050802/ED)
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=> d all l36 tot

L36 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:58622 HCAPLUS
DN 138:86121
ED Entered STN: 24 Jan 2003
TI Process for the identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of the fertilized eggs of **horseshoe** crab
IN **Parab, Pradeep Bhaskar; Chatterji, Anil**
PA Department of Biotechnology, India; Council of Scientific and Industrial Research
SO U.S. Pat. Appl. Publ., 3 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K035-64
ICS C12N005-06; C12N005-10
INCL 424538000; 435354000
CC 9-11 (Biochemical Methods)
Section cross-reference(s): 12
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003017212	A1	20030123	US 2002-112079	20020329
	US 2004180324	A1	20040916	US 2004-807682	20040324
PRAI	US 2001-280085P	P	20010330		
	US 2002-112079	A1	20020329		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003017212	ICM	A61K035-64
	ICS	C12N005-06; C12N005-10
	INCL	424538000; 435354000
US 2003017212	NCL	424/538.000; 435/354.000
	ECLA	A61K035/64; C07K014/435A1
US 2004180324	NCL	435/004.000; 435/325.000
	ECLA	A61K035/64; C07K014/435A1

AB This invention relates to the identification and characterization of cell proliferating factor in the **perivitelline** fluid of the fertilized eggs of the Indian **horseshoe** crab. Accordingly, the present invention provides a process for identification of insulin production β-cells proliferating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab that facilitates the proliferation of AR42J cells from rat origin.
ST insulin prodn beta cell differentiation **perivitelline** fluid egg crab
IT Animal cell line
(AR42J; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT Named reagents and solutions
RL: NUU (Other use, unclassified); USES (Uses)
(Dulbecco's modified min. essential medium; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT **Crab**
(Indian **horseshoe**; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe**

crab)
IT Laboratory ware
(culture plates, NUNC; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT **Egg**
(**fertilized**; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of **fertilized** eggs of **horseshoe** crab)
IT Blood serum
(fetal calf, supplementation with; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT Animal tissue culture
Cell differentiation
Cell proliferation
Storage
Temperature effects, biological
(process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT **Embryo, animal**
(**yolk sac**, **perivitelline** fluid of; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT Pancreatic islet of Langerhans
(β-cell; process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)
IT 9004-10-8, Insulin, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(process for identification and isolation of insulin producing beta cell differentiating factor from the **perivitelline** fluid of fertilized eggs of **horseshoe** crab)

=> d all l40 tot

L40 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:173518 HCAPLUS
DN 140:370411
ED Entered STN: 03 Mar 2004
TI Bending Stiffness of a Crystalline Actin Bundle
AU Shin, Jennifer H.; Mahadevan, L.; So, P. T.; Matsudaira, Paul
CS Department of Mechanical Engineering, M.I.T., Cambridge, MA, 02139, USA
SO Journal of Molecular Biology (2004), 337(2), 255-261
CODEN: JMOBAK; ISSN: 0022-2836
PB Elsevier
DT Journal
LA English
CC 6-3 (General Biochemistry)
Section cross-reference(s): 12
AB The acrosomal process of the sperm of the horseshoe crab (Limulus polyphemus) is a unique crystalline actin bundle, consisting of multiple actin filaments cross-linked by the actin-bundling protein, scruin. For successful fertilization, the acrosomal bundle must penetrate through a 30 μm thick jelly coat surrounding the egg and thus it must be sufficiently stiff. Here, we present two measurements of the bending stiffness of a single crystalline bundle of actin. Results from these measurements indicate that the actin:scruin composite bundle has an average

elastic modulus of 2 GPa, which is similar to that of a single actin filament, and a bending stiffness that is more than two orders of magnitude larger than that of a bundle of uncross-linked actin filaments due to stiffening by the scruin matrix.

ST horseshoe crab fertilization acrosomal bundle actin scruin bending stiffness

IT Sperm
(acrosome; bending stiffness of crystalline actin:scruin composite bundle from acrosome of horseshoe crab in relation to fertilization)

IT Microfilament
(actin filament; bending stiffness of crystalline actin:scruin composite bundle from acrosome of horseshoe crab in relation to fertilization)

IT Bending strength
Fertilization
Limulus polyphemus
Stiffness
Young's modulus
(bending stiffness of crystalline actin:scruin composite bundle from acrosome of horseshoe crab in relation to fertilization)

IT Actins
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(bending stiffness of crystalline actin:scruin composite bundle from acrosome of horseshoe crab in relation to fertilization)

IT Proteins
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(scruin; bending stiffness of crystalline actin:scruin composite bundle from acrosome of horseshoe crab in relation to fertilization)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L40 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:42522 HCAPLUS

DN 132:162594

ED Entered STN: 18 Jan 2000

TI Purification, characterization, and amino acid sequence of an embryonic lectin in **perivitelline** fluid of the **horseshoe** crab

AU Nagai, Taku; Kawabata, Shun-Ichiro; Shishikura, Fumio; Sugita, Hiroaki

CS Department of Molecular Biology, Graduate School of Medical Science, Kyushu University, Fukuoka, 812-8582, Japan

SO Journal of Biological Chemistry (1999), 274(53), 37673-37678
CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

LA English

CC 6-3 (General Biochemistry)
Section cross-reference(s): 3, 12

AB Hemagglutinating activity in **perivitelline** fluid of the **horseshoe** crab embryo dramatically increases during the third and fourth molt of the embryo. A 27-kDa lectin, which we named tachylectin-P (TL-P), was newly identified in **perivitelline** fluid of the **horseshoe** crab Tachypleus tridentatus. TL-P preferentially agglutinated human A-type erythrocytes, and the activity was inhibited by N-acetyl group-containing monosaccharides. The amino acid sequence anal. indicated that TL-P is almost structurally the same as a hemocyte-derived lectin with no hemagglutinating activity, tachylectin-1 (TL-1), and that 218 out of 221 amino acid residues in total were conserved between the two lectins. Despite the high sequence similarity, biol. and biochem. characteristics of TL-P differed from those of TL-1: (i) unlike TL-1, TL-P agglutinates several animal-derived erythrocytes; (ii) unlike TL-1, TL-P has no significant affinity for bacterial lipopolysaccharides or antibacterial activity; (iii) Based on apparent mol. masses determined by gel filtration, TL-P forms a dimer in solution, while TL-1 is present as a monomer; (iv) and TL-P interacts with endogenous proteins of 13 and 14 kDa

present in the **perivitelline** fluid; however, neither has any affinity for TL-1. We propose that TL-P may have an important role in completing embryonic development by interacting with endogenous glycoproteins or N-acetylhexosamines.

ST **horseshoe** crab embryo tachylectin P cDNA sequence

IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(13,000-mol.-weight; purification, characterization, and amino acid sequence of embryonic lectin in **perivitelline** fluid of **horseshoe** crab)

IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(14,000-mol.-weight; purification, characterization, and amino acid sequence of embryonic lectin in **perivitelline** fluid of **horseshoe** crab)

IT Quaternary structure
(protein; purification, characterization, and amino acid sequence of embryonic lectin in **perivitelline** fluid of **horseshoe** crab)

IT Protein sequences
Tachypleus tridentatus
cDNA sequences
(purification, characterization, and amino acid sequence of an embryonic lectin in **perivitelline** fluid of the **horseshoe** crab)

IT **Embryo, animal**
Hemagglutination
(purification, characterization, and amino acid sequence of embryonic lectin in **perivitelline** fluid of **horseshoe** crab)

IT New natural products
(tachylectin-P (lectin))

IT Agglutinins and Lectins
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(tachylectin-P; purification, characterization, and amino acid sequence of embryonic lectin in **perivitelline** fluid of **horseshoe** crab)

IT 258496-86-5
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(amino acid sequence; purification, characterization, and amino acid sequence of an embryonic lectin in **perivitelline** fluid of the **horseshoe** crab)

IT 251890-41-2, GenBank AB028144
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; purification, characterization, and amino acid sequence of an embryonic lectin in **perivitelline** fluid of the **horseshoe** crab)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

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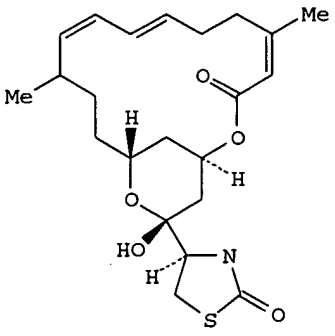
(27) Tettamanti, G; Arch Biochem Biophys 1968, V124, P41 HCAPLUS

L40 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:4168 HCAPLUS
DN 118:4168
ED Entered STN: 10 Jan 1993
TI Regulation of translation and proteolysis during the development of embryonic dorso-ventral polarity in Drosophila. Homology of easter proteinase with **Limulus** proclotting enzyme and translational activation of Toll receptor synthesis
AU Gay, Nicholas J.; Keith, Fionna J.
CS Dep. Biochem., Univ. Cambridge, Cambridge, CB2 1QW, UK
SO Biochimica et Biophysica Acta (**1992**), 1132(3), 290-6
CODEN: BBACAQ; ISSN: 0006-3002
DT Journal
LA English
CC 12-3 (Nonmammalian Biochemistry)
AB The generation of dorso-ventral polarity during Drosophila embryogenesis is regulated by the action of 12 maternally expressed gene products, the dorsal group. These products act together to form a dorso-ventral nuclear gradient of the transcription factor dorsal. At least 3 of the dorsal group genes (snake, easter, and gastrulation defective) encode secreted serine proteinases which probably function during early development in the **perivitelline** compartment of the embryo. Here, the authors report that the easter proteinase is homologous in its light chain sequence to the hemoycte proclotting enzyme (PCE) of the Japanese **horseshoe** crab Tachypleus tridentatus. PCE is the terminal member of a proteolytic cascade activated in response to microbial polysaccharides and acts to cleave coagulogen, an invertebrate equivalent of fibrinogen. On the basis of this homol., the authors predicted the overall primary structure of the ester proteinase, its mode of activation, and its substrate specificity. The result also suggests that easter functions zygotically in hemocytes in a Drosophila defense response analogous to that found in Tachypleus. The Toll receptor protein is absent in early cleavage embryos but accumulates rapidly at the syncytial blastoderm stage, the developmental stage at which its function is required. This finding suggests that translation of Toll mRNA is regulated in response to fertilization and egg deposition. These 2 observations are consistent with a model of dorso-ventral pattern formation in which a proteolytic cascade is activated uniformly in the **perivitelline** compartment of the embryo and causes the release of ventrally localized ligands of the Toll receptor. A possible alternative model in which a proteolytic cascade is activated in response to a ventrally restricted signal is also discussed.
ST Drosophila embryo easter proteinase Toll receptor
IT Drosophila (insect)
(dorsal-ventral polarity in embryo of, easter proteinase and gene Toll protein in)
IT Embryo
(dorsal-ventral polarity in, of Drosophila, easter proteinase and gene Toll protein in)
IT Protein sequences
(of easter proteinase light chain)

IT Enzymes
RL: BIOL (Biological study)
(coagulating, pro-, easter proteinase light chain of Drosophila homol. with)
IT Proteins, specific or class
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(gene Toll, formation of, in Drosophila embryo, dorsal-ventral polarity in relation to)
IT 37259-58-8
RL: BIOL (Biological study)
(gene easter-encoded, of embryo of Drosophila, dorsal-ventral polarity in relation to)

L40 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1986:566595 HCAPLUS
DN 105:166595
ED Entered STN: 15 Nov 1986
TI Latrunculin inhibits the microfilament-mediated processes during fertilization, cleavage and early development in sea urchins and mice
AU Schatten, Gerald; Schatten, Heide; Spector, Ilan; Cline, Christi; Paweletz, Neidhard; Simerly, Calvin; Petzelt, Christian
CS Dep. Biol. Sci., Florida State Univ., Tallahassee, FL, 32306-3050, USA
SO Experimental Cell Research (1986), 166(1), 191-208
CODEN: ECREAL; ISSN: 0014-4827
DT Journal
LA English
CC 4-5 (Toxicology)
GI



I

AB Sperm from sea urchins (Lytechinus variegatus), but not those from Limulus or mice, were affected by latrunculin A (I) [76343-93-6] and fertilization in both sea urchins and in mice was arrested but at different stages. Sea urchin sperm treated with 2.6 μM I are unable to assemble acrosomal processes and their ability to fertilize eggs is impaired. The unwinding of the Limulus sperm acrosomal process occurs in the presence of I. Treated mouse sperm are able to fertilize mouse oocytes in vitro, suggesting that microfilaments may not be required in this mammalian sperm. In sea urchin eggs, sperm incorporation, microvillus elongation and cytokinesis are inhibited. Microtubule-mediated motility occurs normally. I (20 nM) prevents the morphogenetic movements during gastrulation. It reduces the viscosity of actin gels from sea urchin egg homogenates. In unfertilized mouse oocytes, it prevents the colcemid-induced dispersion of the meiotic chromosomes; accumulations of cortical actin are noted adjacent to the scattered chromosomes. Sperm incorporation during mouse fertilization in vitro is unaffected suggesting that sperm entry may occur independent of microfilament activity in mammals. However, the apposition of the pronuclei at the center of the egg cytoplasm does not occur, providing

evidence that cytoplasmic microfilaments may be required for the motions leading to pronuclear union during mouse fertilization. It inhibits the 2nd polar body formation and cytokinesis. Evidently I is a potent inhibitor of microfilament-mediated processes in sperm, eggs and embryos, and it may be useful for exploring the cellular behavior of microfilaments in the maintenance of cell shape and during motility.

ST latrunculin A microfilament mediation process; fertilization latrunculin A microfilament mediation; sperm latrunculin A; development microfilament mediation latrunculin A

IT Lytechinus variegatus
(latrunculin A effect on microfilament-mediated processes during fertilization in)

IT Egg
Embryo
(latrunculin A effect on microfilament-mediated processes in)

IT Microfilament and Microtubule
(latrunculin A effect on processes during fertilization and early development response to)

IT **Limulus**
(latrunculin A effect on sperm acrosomal processes in)

IT Sperm
(latrunculin A effect on, microfilament-mediated processes in mice and sea urchins response to)

IT Actins
RL: BIOL (Biological study)
(latrunculin A effect on, of sea urchins, microfilament-mediated processes in relation to)

IT Development, nonmammalian
(latrunculin effect on microfilament-mediated processes in, of sea urchins)

IT **Fertilization**
(microfilament-mediated processes during, latrunculin A effect on, in mice and sea urchin)

IT Cell division
(mitosis, latrunculin A effect on, of sea urchins, microfilament-mediated processes in relation to)

IT 76343-93-6
RL: BIOL (Biological study)
(microfilament-mediated processes during fertilization and early development response to)

L40 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:549570 HCAPLUS
DN 101:149570
ED Entered STN: 27 Oct 1984
TI Studies on **perivitelline** fluid of **horseshoe** crab embryo. I. Purification and properties of agglutinin from the **perivitelline** fluid of Tachypleus gigas embryo
AU Shishikura, Fumio; Sekiguchi, Koichi
CS Inst. Biol. Sci., Univ. Tsukuba, Sakura, 305, Japan
SO Journal of Biochemistry (Tokyo, Japan) (**1984**), 96(3), 621-8
CODEN: JOBIAO; ISSN: 0021-924X
DT Journal
LA English
CC 15-6 (Immunochemistry)
Section cross-reference(s): 12
AB Agglutinin in the **perivitelline** fluid (PVF) of Tachypleus gigas, **horseshoe** crab, embryo was isolated and purified by a combination of affinity column chromatog. on Sepharose 4B coupled with bovine submaxillary gland mucin and gel-filtration of Fractogel TSK (Toyopearl) HW-60 in Tris-NaCl-CaCl2 (0.05 M Tris-HCl, pH 7.5, containing 0.5 M NaCl and 0.1 M CaCl2) buffer, containing 1 M urea. The specific activity of the purified protein was increased about 1,300 times in comparison with that of the starting material. The active protein was present in highly polymerized forms which were multimers of an identical subunit with a mol. weight of approx. 40,000 as measured by sodium dodecyl sulfate-polyacrylamide gel

electrophoresis. This agglutinin was shown to have multimeric activity towards different kinds of erythrocytes and its hemagglutinating activity was inhibited by N-acetylamino sugars and bovine submaxillary gland mucin containing sialic acid. Urea and guanidine-HCl inhibited the agglutinating activity but the activity recovered after dilution or dialysis, whereas the effect of HCl, NaOH, or 2-mercaptoethanol was irreversible.

ST agglutinin Tachypleus embryo

IT Tachypleus gigas
(agglutinin of **perivitelline** fluid of embryo of, purification and characterization of)

IT Mucins
RL: BIOL (Biological study)
(agglutinin of Tachypleus gigas embryo specificity for)

IT Agglutinins and Lectins
RL: BIOL (Biological study)
(of Tachypleus gigas embryo **perivitelline** fluid, purification and characterization of)

IT **Embryo**
(of Tachypleus gigas, agglutinin of **perivitelline** fluid of, purification and characterization of)

IT 7440-70-2, biological studies
RL: BIOL (Biological study)
(agglutinin of Tachypleus gigas embryo agglutination response to)

IT 50-01-1 57-13-6, biological studies 60-24-2 1310-73-2, biological studies 7647-01-0, biological studies
RL: BIOL (Biological study)
(agglutinin of Tachypleus gigas embryo response to)

IT 50-99-7, biological studies 59-23-4, biological studies 66-84-2 69-79-4 131-48-6 617-04-9 1811-31-0 2438-80-4 3458-28-4 3615-37-0 7512-17-6
RL: BIOL (Biological study)
(agglutinin of Tachypleus gigas embryo specificity for)

L40 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:548352 HCAPLUS
DN 101:148352
ED Entered STN: 27 Oct 1984
TI Studies on **perivitelline** fluid of **horseshoe** crab embryo. II. Purification of agglutinin-binding substance from the **perivitelline** fluid of Tachypleus gigas embryo
AU Shishikura, Fumio; Sekiguchi, Koichi
CS Inst. Biol. Sci., Univ. Tsukuba, Sakura, 305, Japan
SO Journal of Biochemistry (Tokyo, Japan) (**1984**), 96(3), 629-36
CODEN: JOBIAO; ISSN: 0021-924X
DT Journal
LA English
CC 12-1 (Nonmammalian Biochemistry)
AB Three glycoproteins with potent agglutinin-binding activity have been isolated from the **perivitelline** fluid of Tachypleus gigas, **horseshoe** crab, embryo. In the native form, these agglutinin-binding substances were highly aggregated. After being dissociated in 10 M urea, these proteins were fractionated by gel-filtration on a Fractogel TSK (Toyopearl) HW-60 in Tris-NaCl-CaCl2 (0.05 M Tris-HCl, pH 7.5, containing 0.5 M NaCl and 0.1 M CaCl2) containing 10 M urea. The proteins thus obtained were designated as ABS-I, -II, and -III in the order of elution and have apparent mol. wts. of 25,000 (ABS-II) and 10,000 (ABS-III) as judged by both gel-filtration on Fractogel TSK (Toyopearl) HW-60 in 10 M urea and sodium dodecyl sulfate-gel electrophoresis; the mol. weight of ABS-I could not be estimated in the two systems since it was too high. ABS-I, -II, and -III, of which only ABS-I is water-soluble, inhibit one hemagglutination unit of activity with min. quantities of 0.5 μg/mL, 7.8 μg/mL, and 1.0 μg/mL, resp. They were found to be glycoproteins in which 6.6% of the dry weight (ABS-I), 4.2% of the dry weight (ABS-II), and 7.5% of the dry weight (ABS-III) were carbohydrate. The dry weight ratio of hexosamines in these substances is 3:1:2 (ABS-I:ABS-II:ABS-III), and that of sialic acid is also 3:1:2. Amino acid analyses of these

proteins indicated that they have high contents of aspartic acid, glutamic acid, and glycine in common.
ST agglutinin glycoprotein Tachypleus embryo
IT Tachypleus gigas
(agglutinin-binding glycoproteins of embryo of, purification and characterization of)
IT Glycoproteins
RL: BIOL (Biological study)
(agglutinin-binding, of Tachypleus gigas embryo, purification and characterization of)
IT Agglutinins and Lectins
RL: BIOL (Biological study)
(glycoproteins binding to, of Tachypleus gigas embryo, purification and characterization of)
IT Amino acids, biological studies
Carbohydrates and Sugars, biological studies
RL: BIOL (Biological study)
(of agglutinin-binding glycoproteins of Tachypleus gigas embryo)
IT Embryo
(of Tachypleus gigas, agglutinin-binding glycoproteins of, purification and characterization of)

L40 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:507765 HCAPLUS
DN 101:107765
ED Entered STN: 29 Sep 1984
TI Acid mucopolysaccharide in embryos of the **horseshoe** crab, Tachypleus tridentatus (Chelicerata, Arthropoda)
AU Itow, Tomio; Sekiguchi, Koichi
CS Fac. Educ., Shizuoka Univ., Shizuoka, 422, Japan
SO Zoological Science (**1984**), 1(3), 463-70
CODEN: ZOSCEX; ISSN: 0289-0003
DT Journal
LA English
CC 12-3 (Nonmammalian Biochemistry)
AB The distribution, type, quantity, and biosynthesis of acid mucopolysaccharide (AMPS) in embryos of the **horseshoe** crab were examined In embryos at early developmental stages, most of the AMPS was sulfated and filled in the **perivitelline** space between the chorion and the blastoderm. AMPS was found in unfertilized eggs but was rarely synthesized after fertilization. When the germ disk appeared (stage 7), it was separated from the blastoderm by the secretion of a membrane. AMPS dispersed into seawater after the rupture of the chorion (stage 18 or 19). The other type of AMPS was synthesized in the embryonic body and was nonsulfated. At hatching (stage 21), the nonsulfated AMPS decreased and sulfated AMPS was found in the endoskeleton, the intestine, and the articulation of the appendages.
ST acid mucopolysaccharide embryo Tachypleus; sulfate mucopolysaccharide embryo arthropod
IT Tachypleus tridentatus
(acid mucopolysaccharides of egg and embryo of)
IT Cuticle, animal
Joint, anatomical
Skeleton
(acid mucopolysaccharides of, of embryo of **horseshoe** crab)
IT Egg
Embryo
(acid mucopolysaccharides of, of **horseshoe** crab)
IT Mucopolysaccharides, compounds
RL: BIOL (Biological study)
(sulfated, of egg and embryo of **horseshoe** crab)
IT Mucopolysaccharides, biological studies
RL: BIOL (Biological study)
(acid, of egg and embryo of **horseshoe** crab)
IT Digestive tract
(epithelium, acid mucopolysaccharides of, of embryo of

horseshoe crab)

L40 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:573316 HCAPLUS
DN 99:173316
ED Entered STN: 12 May 1984
TI Inhibition of primary sperm attachment, identification of egg envelope proteins, and early development of the horseshoe crab, Limulus polyphemus L
AU Barnum, Susan Ruttenberg
CS Iowa State Univ., Ames, IA, USA
SO (1983) 198 pp. Avail.: Univ. Microfilms Int., Order No. DA8316140
From: Diss. Abstr. Int. B 1983, 44(3), 674
DT Dissertation
LA English
CC 12-3 (Nonmammalian Biochemistry)
AB Unavailable
ST fertilization Limulus; egg envelope protein horseshoe crab; embryo Limulus
IT Sperm
(attachment of, to egg of horseshoe crab)
IT Embryo
(formation of, of horseshoe crab, proteins of egg envelope in relation to)
IT Proteins
RL: BIOL (Biological study)
(of egg envelope, of horseshoe crab, fertilization in relation to)
IT **Fertilization**
(proteins of egg envelope of horseshoe crab in relation to)
IT **Limulus polyphemus**
(proteins of egg envelope of, fertilization in relation to)
IT **Egg**
(proteins of envelope of, of horseshoe crab, **fertilization** in relation to)
IT Organelle
(cell envelope, proteins of, of egg of horseshoe crab, fertilization in relation to)

L40 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1980:38127 HCAPLUS
DN 92:38127
ED Entered STN: 12 May 1984
TI Protein components in the **perivitelline** fluid of the embryo of the **horseshoe** crab, Tachypleus tridentatus
AU Sugita, Hiroaki; Sekiguchi, Koichi
CS Inst. Biol. Sci., Univ. Tsukuba, Ibaraki, 300-31, Japan
SO Developmental Biology (Orlando, FL, United States) (1979), 73(2), 183-92
CODEN: DEBIAO; ISSN: 0012-1606
DT Journal
LA English
CC 12-3 (Nonmammalian Biochemistry)
AB Protein components in the **perivitelline** fluid of the embryo of T. tridentatus were classified into 2 proteins and 2 protein groups according to the results obtained by electrophoretic and immunol. analyses and HIO4-Schiff test. One group was identified as hemocyanin (H proteins). The others could not be identified and were named B-1 protein, B-2 protein, and the residual proteins. These components showed remarkable transition patterns in quantity during development. Tachypleus Embryos synthesized hemocyanin after the 1st embryonic molt and secreted it into the **perivitelline** fluid before the 3rd embryonic molt. The amount of hemocyanin increased until the 7th day after the 3rd embryonic molt. The amount of hemocyanin increased gradually until the 4th embryonic molt. It disappeared completely from the fluid after the 4th embryonic molt. The B-1 protein and residual proteins were found in the **perivitellite** fluid at all stages of development examined The amount

of B-1 protein increased during development. The amount of the proteins stayed almost constant until the 4th embryonic molt when it suddenly increased .apprx.3-fold. The B-2 protein was found in the **perivitelline** fluid only after the 4th embryonic molt and remained constant Some of these components were involved in the remarkable swelling of the inner egg membrane of the embryo.

ST protein **perivitelline** fluid crab embryo; Iachypleus embryo **perivitelline** fluid protein; crab development **perivitelline** fluid hemocyanin

IT Hemocyanins
Proteins
RL: BIOL (Biological study)
(of **perivitelline** fluid, of embryo of king crab)

IT Embryo
(protein formation by, of king crab)

IT Tachypleus tridentatus
(proteins of **perivitelline** fluid of embryo of)

IT Amniotic fluid
(proteins of, of king crab)

L40 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:121748 HCAPLUS
DN 78:121748
ED Entered STN: 12 May 1984
TI Gamete surface molecular components and their functional roles in sperm-egg interactions of the horseshoe crab, Limulus polyphemus (merostomata). Immunological and biochemical approach
AU Mowbray, Rodney Cameron
CS Iowa State Univ., Ames, IA, USA
SO (1972) 157 pp. Avail.: Univ. Microfilms, Ann Arbor, Mich., Order No. 73-3916
From: Diss. Abstr. Int. B 1973, 33(8), 4045
DT Dissertation
LA English
CC 12-13 (Nonmammalian Biochemistry)
AB Unavailable
ST sperm egg interaction Limulus; proteinaceous antigen sperm egg
IT Proteins
RL: BIOL (Biological study)
(of egg surface, of crabs, in fertilization)

IT **Fertilization**
(proteins of egg surface in, of crabs)

IT **Limulus polyphemus**
(proteins of egg surface of, in fertilization)

IT **Egg**
(proteins of surface of, of crabs in **fertilization**)

=> b biosis
FILE 'BIOSIS' ENTERED AT 07:50:05 ON 03 AUG 2005
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 27 July 2005 (20050727/ED)

FILE RELOADED: 19 October 2003.

=> d all 163 tot

L63 ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN **1985:329075** BIOSIS
DN PREV198579109071; BA79:109071
TI PROLONGED SURVIVAL OF THE GRAAFIAN FOLLICLE AND **FERTILIZATION** IN

THE JAPANESE GREATER **HORSESHOE** BAT RHINOLOPHUS-FERRUMEQUINUM-NIPPON.
AU OH Y K [Reprint author]; MORI T; UCHIDA T A
CS ZOOL LAB, FAC AGRICULTURE, KYUSHU UNIV 46-06, FUKUOKA 812, JPN
SO Journal of Reproduction and Fertility, (1985) Vol. 73, No. 1, pp. 121-126. CODEN: JRPFA4. ISSN: 0022-4251.
DT Article
FS BA
LA ENGLISH
AB After the mating season of the Japanese greater **horseshoe** bat in mid- or late Oct., only the right ovary maintained a single Graafian follicle throughout hibernation until early April. During this time the ovum was in prophase of meiosis I (resting stage) with many large lipid droplets as a nutrient source. In synchrony with stigma formation, there was resumption of meiotic activity, separation of the cumulus oophorus from the granulosa layer and dispersion of the follicle cells just before ovulation in spring. The block to polyspermy seemed to reside in the zona pellucida, because no spermatozoa could be detected in the **perivitelline** space of the 6 **fertilized** ova examined, although a 2nd spermatozoon was recognized in the zona pellucida of 3 ova.
CC Cytology - Animal 02506
Genetics - Animal 03506
Behavioral biology - Animal behavior 07003
Circadian rhythms and other periodic cycles 07200
Metabolism - Lipids 13006
Reproductive system - Physiology and biochemistry 16504
Endocrine - Gonads and placenta 17006
Temperature - Thermorhythms 23008
IT Major Concepts
Behavior; Biosynchronization; Cell Biology; Endocrine System (Chemical Coordination and Homeostasis); Genetics; Metabolism; Reproductive System (Reproduction)
IT Miscellaneous Descriptors
ZONA PELLUCIDA MEIOSIS SPERM STORAGE HIBERNATION
ORGN Classifier
Rhinolophidae 85915
Super Taxa
Chiroptera; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Bats, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

L63 ANSWER 2 OF 4 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN **1985:260914** BIOSIS
DN PREV198579040910; BA79:40910
TI ACID MUCOPOLYSACCHARIDE IN EMBRYOS OF THE **HORSESHOE**-CRAB **TACHYPLEUS**-TRIDENTATUS CHELICERATA ARTHROPODA.
AU ITOW T [Reprint author]; SEKIGUCHI K
CS DEP BIOLOGY, FAC EDUCATION, SHIZUOKA UNIV, SHIZUOKA 422, JAPAN
SO Zoological Science (Tokyo), (1984) Vol. 1, No. 3, pp. 463-470. CODEN: ZOSCEX. ISSN: 0289-0003.
DT Article
FS BA
LA ENGLISH
AB The distribution, type, quantity and biosynthesis of acid mucopolysaccharide (AMPS) in embryos of the **horseshoe** crab (Chelicerata, Arthropoda) were examined. In embryos at early developmental stages, most of the AMPS is the sulfated type and fills in the **perivitelline** space between the chorion and the blastoderm. It is found in **unfertilized** eggs and is rarely synthesized after **fertilization.** When the germ disc appears (stage 7), it is separated from the blastoderm by the secretion of a membrane. It disperses into sea water after the rupture of the chorion (stage 18 or 19). The other type of AMPS is synthesized in the embryonic body and is non-sulfated. At the hatching stage (stage 21), the non-sulfated AMPS decreases and sulfated AMPS is found in the endoskeleton, the intestine

and in the articulation of the appendages.
CC Biochemistry studies - Carbohydrates 10068
Biophysics - Membrane phenomena 10508
Metabolism - Carbohydrates 13004
Digestive system - Physiology and biochemistry 14004
Reproductive system - Physiology and biochemistry 16504
Bones, joints, fasciae, connective and adipose tissue - Physiology and biochemistry 18004
Development and Embryology - Morphogenesis 25508
Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060
Invertebrate body regions - Appendages 64212
IT Major Concepts
Development; Metabolism; Physiology; Reproductive System (Reproduction)
IT Miscellaneous Descriptors
BIOSYNTHESIS DEVELOPMENT CHORION BLASTODERM **FERTILIZATION** MEMBRANE ENDOSKELETON INTESTINE APPENDAGE
ORGN Classifier
Merostomata 75404
Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates

L63 ANSWER 3 OF 4 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN **1980:162715** BIOSIS
DN PREV198069037711; BA69:37711
TI PROTEIN COMPONENTS IN THE PERI VITELLINE FLUID OF THE EMBRYO OF THE HORSESHOE-CRAB **TACHYPLEUS**-TRIDENTATUS.
AU SUGITA H [Reprint author]; SEKIGUCHI K
CS INST BIOL SCI, UNIV TSUKUBA, SAKURA-MURA, NIIHARI, IBARAKI, OSAKA 300-31, JPN
SO Developmental Biology, (1979) Vol. 73, No. 2, pp. 183-192.
CODEN: DEBIAO. ISSN: 0012-1606.
DT Article
FS BA
LA ENGLISH
AB Protein components in the **perivitelline** fluid of the embryo of the horseshoe crab, T. tridentatus, were studied during the development of the embryo. The components were classified into 2 proteins and 2 protein groups according to the results obtained by electrophoretic and immunological analyses and [PAS] periodic acid-Schiff test. One group was identified as hemocyanin (H proteins). The others could not be identified and were named B-1 protein, B-2 protein, and the rest proteins. These components showed remarkable transition patterns in quantity during development. **Tachypleus** embryo started to synthesize hemocyanin after the 1st embryonic molting and secreted it into the **perivitelline** fluid before the 3rd embryonic molting. The amount of hemocyanin continued to increase until the 7th day after the 3rd embryonic molting and afterward it began to decrease gradually until the 4th embryonic molting. It disappeared completely from the fluid after the 4th embryonic molting. The B-1 protein and the rest proteins were found in the **perivitelline** fluid at all stages of development examined. Roughly speaking, the amount of B-1 protein increased during development. The amount of the rest proteins stayed almost constant until the 4th embryonic molting when it suddenly increased about 3-fold. The B-2 protein was found in the **perivitelline** fluid only after the 4th embryonic molting and remained constant. Some of these components are considered to be more or less useful for the remarkable swelling of the inner **egg** membrane of the embryo.
CC Cytology - Animal 02506
Ecology: environmental biology - Water research and fishery biology 07517
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Minerals 10069

Biophysics - Methods and techniques 10504
Biophysics - Membrane phenomena 10508
Movement 12100
Metabolism - Minerals 13010
Metabolism - Proteins, peptides and amino acids 13012
Blood - Other body fluids 15010
Integumentary system - Physiology and biochemistry 18504
Development and Embryology - General and descriptive 25502
Immunology - General and methods 34502
Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060
IT Major Concepts
Cell Biology; Development; Metabolism; Physiology
IT Miscellaneous Descriptors
INNER **EGG** MEMBRANE SWELLING MOLT HEMO CYANINS ELECTROPHORESIS IMMUNOCHEMISTRY PER IODIC-ACID SCHIFF TEST
ORGN Classifier
Merostomata 75404
Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates
RN 13444-71-8 (PERIODIC-ACID)

L63 ANSWER 4 OF 4 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN **1977:28194** BIOSIS
DN PREV197713028194; BR13:28194
TI A STUDY ON THE PROTEIN IN THE **PERI VITELLINE** FLUID OF THE JAPANESE AND AMERICAN **HORSESHOE**-CRAB.
AU SUGITA H; SEKIGUCHI K
SO Zoological Magazine (Tokyo), (1975) Vol. 84, No. 4, pp. 315.
CODEN: DOZAAK. ISSN: 0044-5118.
DT Article
FS BR
LA Unavailable
CC Microscopy - Cytology and cytochemistry 01054
Cytology - Animal 02506
Ecology: environmental biology - Water research and fishery biology 07517
Biochemistry studies - Proteins, peptides and amino acids 10064
Biophysics - Methods and techniques 10504
Movement 12100
Invertebrata: general and systematic - Chelicerata: Merostomata 63597
Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060
IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Physiology; Systematics and Taxonomy
IT Miscellaneous Descriptors
ABSTRACT **TACHYPLEUS**-TRIDENTATUS **LIMULUS**-POLYPHEMUS ELECTROPHORESIS
ORGN Classifier
Merostomata 75404
Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates

=> d all l67 tot

L67 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1997:88498 BIOSIS
DN PREV199799380211
TI Energy source in the developing eggs of the Indian **Horseshoe** Crab, **Tachypleus** gigas (Muller).

AU **Chatterji, Anil** [Reprint author]; Aguiar, Queenie; Saldanha, Christine [Reprint author]
CS Natl. Inst. Oceanography, Dona Paula, Goa 403004, India
SO Journal of Aquaculture in the Tropics, (1996) Vol. 11, No. 4, pp. 271-276. ISSN: 0970-0846.
DT Article
LA English
ED Entered STN: 26 Feb 1997
Last Updated on STN: 26 Feb 1997
AB Wet weight, dry weight, water content, ash weight, soluble and insoluble proteins, carbohydrate, lipids, and glycogen were determined from 0 to 40th day after **fertilization** of the developing eggs of the Indian **horseshoe** crab, **Tachypleus** gigas (Muller). The water and ash content increased steadily from 34.12 to 81.35% and 6.35 to 12.00% respectively from 0 to 40th day after **fertilization.** Dry weight of the developing eggs decreased with increase in the stages of development. The protein values increased from 7.02 to 11.53 mg/100 mg; insoluble protein fraction decreased rapidly from 43.15 to 26.01 mg/100 mg with the development of the eggs. The carbohydrate content decreased from 10.65 to 4.53 mg/100 mg. Similarly, the lipid content decreased relatively and varied from 33.15 to 27.35 mg/100 mg only in the later stages of development. The glycogen decreased considerably from 3.07 to 0.09 mg/100 mg.
CC General biology - Conservation and resource management 00512
Ecology: environmental biology - Wildlife management: aquatic 07516
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Biophysics - Molecular properties and macromolecules 10506
Metabolism - Energy and respiratory metabolism 13003
Development and Embryology - General and descriptive 25502
Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060
IT Major Concepts
Biochemistry and Molecular Biophysics; Conservation; Development; Metabolism; Physiology; Wildlife Management (Conservation)
IT Chemicals & Biochemicals
GLYCOGEN
IT Miscellaneous Descriptors
AQUACULTURE; AQUACULTURE SPECIES; ASH WEIGHT; CARBOHYDRATE; DEVELOPING EGGS; DEVELOPMENT; DRY WEIGHT; EGG; ENERGY SOURCE; **FERTILIZATION**; GLYCOGEN; INDIAN **HORSESHOE** CRAB; INSOLUBLE; LIPIDS; PROTEINS; SOLUBLE; WATER CONTENT; WET WEIGHT
ORGN Classifier
Merostomata 75404
Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Organism Name
Merostomata
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates
ORGN Classifier
Organisms 00500
Super Taxa
Organisms
Organism Name
Tachypleus gigas
Taxa Notes
Organisms
RN 9005-79-2 (GLYCOGEN)

=> b embase
FILE 'EMBASE' ENTERED AT 07:50:51 ON 03 AUG 2005

FILE COVERS 1974 TO 28 Jul 2005 (20050728/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all l71 tot

L71 ANSWER 1 OF 1 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 80057328 EMBASE
DN 1980057328
TI Protein components in the **perivitelline** fluid of the embryo of the **Horseshoe** crab, **Tachypleus** tridentatus.
AU Sugita H.; Sekiguchi K.
CS Inst. Biol. Sci., Univ. Tsukuba, Ibaraki, Japan
SO Developmental Biology, (1979) Vol. 73, No. 2, pp. 183-192.
CODEN: DEBIAO
CY United States
DT Journal
FS 001 Anatomy, Anthropology, Embryology and Histology
021 Developmental Biology and Teratology
LA English
ED Entered STN: 911209
Last Updated on STN: 911209
CT Medical Descriptors:
*embryo
*vitelline membrane
arthropod
animal experiment
pregnancy
Drug Descriptors:
*protein
hemocyanin
RN (protein) 67254-75-5; (hemocyanin) 9013-72-3

=> d all l74 tot

L74 ANSWER 1 OF 1 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 2002376602 EMBASE
TI Long-term in vitro generation of amoebocytes from the indian **horseshoe** crab **Tachypleus** gigas (Muller).
AU Joshi B.; **Chatterji A.**; Bhonde R.
CS R. Bhonde, National Centre for Cell Science, NCCS Complex, Ganaeshkhind, Pune 411007, India. rrbhonde@hotmail.com
SO In Vitro Cellular and Developmental Biology - Animal, (2002) Vol. 38, No. 5, pp. 255-257.
Refs: 7
ISSN: 1071-2690 CODEN: ICDBEO
CY United States
DT Journal; Article
FS 021 Developmental Biology and Teratology
LA English
SL English
ED Entered STN: 20021107
Last Updated on STN: 20021107
AB Amoebocyte is the single type of cell circulating in the **horseshoe** crab hemolymph, which plays a major role in the defense system of the animal. Granules present in these cells are sensitive to nanogram quantities of bacterial endotoxins, which form the basis of the **Limulus** amoebocyte lysate (LAL) test. Normally, amoebocytes for the production of the LAL are collected by cardiac puncture; hence, development of the in vitro culture system for amoebocytes will reduce the variability of the lysate and help to conserve the 400 million-yr-old

living fossil. In the present investigation we have attempted organ culture of gill flaps that have been shown to be the source of amoebocytes. The gill flaps were cultured at 28° C on a rocker platform in a modified L-15 medium supplemented with 10% v/v **horseshoe** crab serum. This led to the release of amoebocytes outside the gill flaps for a period of 6-8 wk with a more or less steady number of amoebocytes during the weekly harvest. No significant difference was seen in the yield of amoebocytes from male and female **horseshoe** crabs. Confocal laser microscopy studies revealed significant difference in the size of amoebocytes released in vitro as compared with those obtained in vivo. Thus, we have optimized the culture conditions for the long-term generation of amoebocytes in vitro from the Indian **horseshoe** crab **Tachypleus** gigas by reducing the incidence of contamination, simulating in vivo conditions for the organ culture of gill flaps, and improvising the nutritional status using the modified L-15 medium, providing the desired osmolarity and pH.

CT Medical Descriptors:
*animal cell culture
hemolymph
Limulus lysate test
heart
organ culture
gill
confocal laser microscopy
cell size
simulation
nutritional status
osmolarity
pH
in vitro study
nonhuman
male
female
animal tissue
animal cell
article

=> b medl
FILE 'MEDLINE' ENTERED AT 07:51:12 ON 03 AUG 2005

FILE LAST UPDATED: 2 AUG 2005 (20050802/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all l83 tot

L83 ANSWER 1 OF 1 MEDLINE on STN
AN 2002660689 MEDLINE
DN PubMed ID: 12418920
TI Long-term in vitro generation of amoebocytes from the Indian horseshoe crab Tachypleus gigas (Muller).

AU Joshi Bhupali; **Chatterji Anil**; Bhonde Ramesh
CS National Centre for Cell Science, NCCS Complex, Ganaeshkhind, Pune 411007, India.
SO In vitro cellular & developmental biology. Animal, (2002 May) 38 (5) 255-7.
Journal code: 9418515. ISSN: 1071-2690.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200307
ED Entered STN: 20021108
Last Updated on STN: 20030708
Entered Medline: 20030707
AB Amoebocyte is the single type of cell circulating in the horseshoe crab hemolymph, which plays a major role in the defense system of the animal. Granules present in these cells are sensitive to nanogram quantities of bacterial endotoxins, which form the basis of the Limulus amoebocyte lysate (LAL) test. Normally, amoebocytes for the production of the LAL are collected by cardiac puncture; hence, development of the in vitro culture system for amoebocytes will reduce the variability of the lysate and help to conserve the 400 million-yr-old living fossil. In the present investigation we have attempted organ culture of gill flaps that have been shown to be the source of amoebocytes. The gill flaps were cultured at 28 degrees C on a rocker platform in a modified L-15 medium supplemented with 10% v/v horseshoe crab serum. This led to the release of amoebocytes outside the gill flaps for a period of 6-8 wk with a more or less steady number of amoebocytes during the weekly harvest. No significant difference was seen in the yield of amoebocytes from male and female horseshoe crabs. Confocal laser microscopy studies revealed significant difference in the size of amoebocytes released in vitro as compared with those obtained in vivo. Thus, we have optimized the culture conditions for the long-term generation of amoebocytes in vitro from the Indian horseshoe crab Tachypleus gigas by reducing the incidence of contamination, simulating in vivo conditions for the organ culture of gill flaps, and improvising the nutritional status using the modified L-15 medium, providing the desired osmolarity and pH.
CT Check Tags: Female; Male
Animals
*Cell Culture Techniques: MT, methods
Cells, Cultured
Copper Sulfate: ME, metabolism
Cytoplasmic Granules: CH, chemistry
Endotoxins: ME, metabolism
Gills: CY, cytology
*Hemolymph: CY, cytology
***Horseshoe Crabs: CY, cytology**
Limulus Test
Microscopy, Confocal
Research Support, Non-U.S. Gov't
RN 7758-98-7 (Copper Sulfate)
CN 0 (Endotoxins)

=> d all l85 tot

L85 ANSWER 1 OF 2 MEDLINE on STN
AN **85054732** MEDLINE
DN PubMed ID: 6542101
TI Studies on **perivitelline** fluid of horseshoe crab embryo. II. Purification of agglutinin-binding substance from the **perivitelline** fluid of Tachypleus gigas embryo.
AU Shishikura F; Sekiguchi K
SO Journal of biochemistry, (1984 Sep) 96 (3) 629-36.
Journal code: 0376600. ISSN: 0021-924X.
CY Japan

DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198501
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19850114
AB Three glycoproteins with potent agglutinin-binding activity have been isolated from the **perivitelline** fluid of Tachypleus gigas, horseshoe crab, embryo. In the native form, these agglutinin-binding substances were highly aggregated. After being dissociated in 10 M urea, these proteins were fractionated by gel-filtration on a Fractogel TSK (Toyopearl) HW-60 in Tris-NaCl-CaCl2 (0.05 M Tris-HCl, pH 7.5, containing 0.5 M NaCl and 0.1 M CaCl2) containing 10 M urea. The proteins thus obtained were designated as ABS-I, -II, and -III in the order of elution and have apparent molecular weights of 25,000 (ABS-II) and 10,000 (ABS-III) as judged by both gel-filtration on Fractogel TSK (Toyopearl) HW-60 in 10 M urea and sodium dodecyl sulfate-gel electrophoresis; the molecular weight of ABS-I could not be estimated in the two systems since it was too high. ABS-I, -II, and -III, of which only ABS-I is water-soluble, inhibit one hemagglutination unit of activity with minimum quantities of 0.5 micrograms/ml, 7.8 micrograms/ml, and 1.0 micrograms/ml, respectively. They were found to be glycoproteins in which 6.6% of the dry weight (ABS-I), 4.2% of the dry weight (ABS-II), and 7.5% of the dry weight (ABS-III) were carbohydrate. The dry weight ratio of hexosamines in these substances is 3:1:2 (ABS-I: ABS-II: ABS-III), and that of sialic acid is also 3:1:2. Amino acid analyses of these proteins indicated that they have high contents of aspartic acid, glutamic acid, and glycine in common.
CT Check Tags: Female
Amino Acids: AN, analysis
Animals
Carbohydrates: AN, analysis
*Carrier Proteins: IP, isolation & purification
*Glycoproteins: IP, isolation & purification
Hemagglutination
Hemagglutination Inhibition Tests
Hemagglutinins
***Horseshoe Crabs: EM, embryology**
Molecular Weight
Research Support, Non-U.S. Gov't
Sialic Acids: AN, analysis
Vitelline Membrane: IM, immunology
CN 0 (Amino Acids); 0 (Carbohydrates); 0 (Carrier Proteins); 0 (Glycoproteins); 0 (Hemagglutinins); 0 (Sialic Acids)

L85 ANSWER 2 OF 2 MEDLINE on STN
AN **85054731** MEDLINE
DN PubMed ID: 6542100
TI Studies on **perivitelline** fluid of horseshoe crab embryo. I. Purification and properties of agglutinin from the **perivitelline** fluid of Tachypleus gigas embryo.
AU Shishikura F; Sekiguchi K
SO Journal of biochemistry, (1984 Sep) 96 (3) 621-8.
Journal code: 0376600. ISSN: 0021-924X.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198501
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19850114
AB Agglutinin in the **perivitelline** fluid (PVF) of Tachypleus gigas, horseshoe crab, embryo was isolated and purified by a combination of affinity column chromatography on Sepharose 4B coupled with bovine

submaxillary gland mucin and gel-filtration of Fractogel TSK (Toyopearl) HW-60 in Tris-NaCl-CaCl2 (0.05 M Tris-HCl, pH 7.5, containing 0.5 M NaCl and 0.1 M CaCl2) buffer, containing 1 M urea. The specific activity of the purified protein was increased about 1,300 times in comparison with that of the starting material. The active protein was present in highly polymerized forms which were multimers of an identical subunit with a molecular weight of approximately 40,000 as measured by sodium dodecyl sulfate-polyacrylamide gel electrophoresis. This agglutinin was shown to have multimeric activity towards different kinds of erythrocytes and its hemagglutinating activity was inhibited by N-acetylamino sugars and bovine submaxillary gland mucin containing sialic acid. Urea and guanidine-HCl inhibited the agglutinating activity but the activity recovered after dilution or dialysis, whereas the effect of HCl, NaOH, or 2-mercaptoethanol was irreversible.

CT Check Tags: Female
Animals
Calcium
Hemagglutination
*Hemagglutinins: IP, isolation & purification
Horses
***Horseshoe Crabs: EM, embryology**
Humans
Macromolecular Substances
Molecular Weight
Protein Denaturation
Research Support, Non-U.S. Gov't
Species Specificity
Vitelline Membrane

RN 7440-70-2 (Calcium)

CN 0 (Hemagglutinins); 0 (Macromolecular Substances)

=> b home
FILE 'HOME' ENTERED AT 07:51:23 ON 03 AUG 2005

=>